Testimony of Rick Goss
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Organization, and Procurement
regarding
IT Procurement and Disposal: Application of the Federal
Government's Green Policies in the Life Cycle Management
of its IT Assets

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INTRODUCTION

Thank you Chairwoman Watson, Representative Bilbray and Members of the Subcommittee for the opportunity to testify regarding the federal government's green policies related to the life-cycle management of its IT assets. My name is Rick Goss and I am the Vice President of Environment and Sustainability for the Information Technology Industry Council, or ITI. ITI is a trade association representing 43 major high-tech and electronics manufacturers in the information and communications technology (ICT) sector. Our members are global leaders in all facets of ICT innovation, from hardware to services to software. ITI promotes policies that favor innovation, sustainability and open market competition. Through our Environmental Leadership Council, we also represent several dozen additional prominent manufacturers in the high-tech arena.

Our member companies have long been leaders in sustainability: many exceed the requirements on environmental design and energy efficiency, and lead the way in product stewardship efforts. As a result, the Dow Jones Sustainability Index, the Financial Times Sustainability Index, and the Global 100 have consistently recognized numerous ITI members for their concrete environmental and sustainability achievements. In addition, *Newsweek* recently issued its 2009 Green Rankings of America's 500 largest corporations, based on their overall environmental performance, policies, and reputation. Our members occupy 4 of the top 5 positions, and 14 of the top 40 slots overall.

On behalf of our member companies, I am pleased to testify today regarding the ongoing environmental achievements of our companies and to offer our suggestions regarding federal government policies, practices and opportunities to improve IT life-cycle management. The federal government is the world's largest single purchaser of ICT equipment and services, and is expected to spend over $75 billion in 2010. Consequently, the federal government has an unparalleled role to play in terms of driving continuous sustainability achievements in the ICT marketplace and in setting a leading example throughout the public and private sectors.

I have divided my remarks and recommendations into two sections. The first focuses on the environmental attributes and life-cycle management considerations of ICT products procured by the government. The second addresses the broad energy, climate and economic benefits that the federal government can drive through its own procurement of advanced ICT systems and services, and by enacting policies that encourage ICT deployment throughout the broader economy.

In addition, I would be remiss in my testimony if I did not introduce the concepts of cloud computing and virtualization to the Subcommittee as a potential paradigm-shift in how the federal government procures ICT systems and services. I would recommend that the Subcommittee consider hosting a follow-up hearing to explore cloud computing and virtualization innovations and their impacts on future government enterprise ICT procurement.

SECTION 1: ICT PRODUCT ACHIEVEMENTS & CONSIDERATIONS

ICT manufacturers recognize that we have a critical role to play in the sustainability effort by continuously improving product environmental, energy and performance characteristics. Our companies have consistently risen to that challenge. As a result of our members' abiding dedication to product stewardship and technological innovation, the high-tech and electronics industries continue to achieve significant and sustained environmental innovation throughout the entire product lifecycle: from environmental design to energy efficiency, beneficial reuse and proper end-of-life management.

It is also critical to emphasize that the competitive marketplace – rather than government mandates and regulation – continues to be the primary driver behind these improvements. On the whole, every year our products become more energy efficient, incorporate innovative and environmentally-preferable materials, and become easier to upgrade, disassemble and recycle. This process of continuous evolution, driven by market demand and competition, can be readily observed by comparing today's products to similar products that were manufactured just a few years ago. The federal government can and should continue to exert a major market influence.

Energy Star & EPEAT

Two of the federal government's key programs in the areas of green IT procurement are Energy Star and EPEAT - The Electronic Product Environmental Assessment Tool. ITI and our members companies are strong supporters and active participants in both of these key initiatives. Both programs promise valuable and concrete market rewards to those leadership companies that make the significant time and resource investments necessary to ensure that our products meet or exceed the requirements.

For purposes of today's hearing, the Energy Star program includes such key products as computers, copiers and fax machines, monitors, printers and scanners, and servers. For almost two decades, Energy Star has been the premier product energy efficiency

benchmark, and is well recognized by public, private and individual purchasers alike. U.S. EPA reports that, since 2000, Americans have purchased more than 2.5 billion Energy Star qualified products, resulting in significant cost and energy savings. Over 80% of products sold are in the categories of home and office electronics. Energy Star is recognized globally as the de-facto standard for energy performance, and its strength is in the simplicity of its purpose and recognition as a brand.

The EPEAT program is based on IEEE 1680, a multi-attribute international standard developed by a diverse group of stakeholders through a consensus-based process. The EPEAT program was developed to allow IT purchasers to base procurement decisions on the full life-cycle environmental attributes of high-tech products. EPEAT incorporates recognized metrics and criteria, which can be measured, verified and consistently applied. The EPEAT standard currently applies to computers and monitors, and is currently being expanded to include (among other products) imaging equipment – another major product category purchased in large volume by the federal government and other major institutional purchasers.

Currently, federal, state and local governments, foreign governments, commercial entities and academic institutions have specified EPEAT in over $60 billion worth of procurement contracts. Members of ITI and our Environmental Leadership Council dominate the EPEAT registry, and presently manufacture 90% of the 419 EPEAT Gold-rated products.

Energy Star and EPEAT Recommendations

ITI would like to offer the following recommendations in relation to Energy Star and EPEAT:

1. **Increase Federal Government Procurement of Energy Star and EPEAT Products.** President Obama's new Executive Order on "Federal Leadership in Environmental, Energy, and Economic Performance" includes specific provisions on procuring Energy Star and EPEAT electronic equipment. This reinforces an Executive Order issued by President Bush in 2007. ITI supports this commitment, and looks forward to working with the Administration and Congress on its fulfillment.

   Purchasing requirements for Energy Star and EPEAT products are already included in the Federal Acquisition Regulation. However, previous studies have demonstrated that federal agencies are not purchasing Energy Star products as directed. This lack of compliance has resulted in a reported annual taxpayer energy expense of over $400 million, and associated emissions of approximately 3 million metric tons of carbon dioxide. Since Energy Star is a mandatory criterion in the EPEAT program, this means that purchases of EPEAT-registered products are also suppressed. This outcome also significantly undermines the market incentive for manufacturers to participate in these programs. ITI and our

member companies stand ready to help implement this Executive Order and improve federal purchases of environmentally preferable products.

2. **Provide Targeted Funding for Education and Outreach Efforts.** The largest and most immediate opportunity to secure additional energy and cost savings is by educating purchasers about the benefits of buying Energy Star and EPEAT qualified products. This includes informing purchasers regarding how to take full advantage of the energy-saving capabilities already designed into nearly every ICT product in use today. Congress should consider funding for initiatives to promote broader awareness on energy efficiency and the Energy Star Program, on effective use of power management features incorporated into ICT products and systems, and on the life-cycle benefits of purchasing EPEAT products.

3. **Maintain the Focus of the Energy Star Program on Product Energy Use.** U.S.EPA is considering a potential expansion of the Energy Star program to factor "additional energy impacts" into the specification. This proposal would result in a wide range of new and unclear factors and detract from the traditional focus of the Energy Star program on the energy consumption of products.

   The consideration of additional energy impacts would necessitate a complex evaluation of a multitude of factors in order to account for the full picture of related energy impacts associated with a product. Among others, these would include the energy impacts associated with:

   - Manufacturing operations
   - Supply chain management
   - Recycled or recovered content in products
   - Product distribution
   - Product packaging
   - Telework programs for employees
   - Product recycling programs

   The process of quantifying and measuring these impacts would be highly complex, and would prove confusing for businesses and consumers. The success of the Energy Star label is due in large part to the fact that it is objectively measurable and verifiable. By focusing solely on the attribute of energy consumption of a particular product model, Energy Star offers product purchasers a straightforward and objective means of evaluating the energy efficiency of a product. Including other environmental considerations will dilute this benefit and introduce the consideration of complex impacts based largely on poor data quality. Energy Star would evolve into a multi-attribute eco-label based on vague criteria and an unknown means of verification.

EPA should maintain the focus of the Energy Star program solely on the energy consumption of products as used by the purchaser, without regard for other "additional energy impacts."

4. **Provide Additional Funding and Oversight of EPEAT.** Manufacturers want to see EPEAT succeed and become the premier international procurement program for green electronics. ITI and our member companies have devoted hundreds of hours to developing this standard with other stakeholders, redesigning products to meet criteria and working with U.S. EPA and EPEAT staff to strengthen and improve the program.

    EPEAT was created as an institutional procurement tool, with the federal government as its primary audience. U.S. EPA is a major EPEAT stakeholder and, since the program's launch in 2007, has actively encouraged its expansion into additional countries, into the consumer marketplace and into several additional product categories. The program is expanding at a rapid pace, but is suffering from a lack of adequate funding and oversight.

    The administration of the EPEAT program is currently funded solely by manufacturer registration fees. In addition, manufacturers are providing financial support for the development of the new EPEAT standard for imaging equipment. U.S. EPA funded the development of the original EPEAT standard for computers and monitors and provided a small grant to launch the program. While the agency has provided partial support for the development of four new standards, there has been no additional support to revise the original standard or provide for the long term stability of this important program.

    In addition, ITI and our members strongly support additional federal government oversight of the EPEAT program. EPEAT is a federal procurement requirement and is being increasingly recognized in international venues and by numerous private purchasers. However, the EPEAT program is managed by a small, third-party, single source provider. ITI encourages Congress to provide additional funding and oversight of EPEAT to make sure this important program succeeds.

Additional Product Recommendations

1. **Ensure Harmonization of Procurement Requirements Between Federal Agencies.** As federal agencies seek to implement the new Executive Order, the federal government should ensure that procurement requirements are consistent. A lack of consistency can lead to a fragmented federal marketplace, with different contract specifications and paperwork requirements. This could result in delays and increased costs that neutralize the advantages for manufacturers that meet or exceed the requirements.

2. **Rely on Advanced Printing Solutions.** New digital and two sided thermal printing technologies increase printing speeds and avoid print overruns while saving energy, paper and consumables. By relying on networked printers and digital printing solutions, public and private sector entities alike can achieve significant cost savings while increasing efficiency and reducing associated carbon emissions. According to industry estimates, for every one dollar of actual printing, there are $5-8 of other costs, including warehousing, distribution and inventory obsolescence. Each of these has an associated energy use and emissions footprint, and each can be reduced by switching to "on-demand" digital solutions. The carbon abatement potential due to minimizing overruns of books, magazines and newspapers through digital printing services is on the order of 114 to 251 million tons of CO_2 equivalent (this estimation includes a rough estimate of the embedded carbon and energy use of the printers as well as the paper production).

3. **Increase the Use of Video Conferencing.** ITI members have pioneered the development of video conferencing technologies that make virtual meetings possible. Video conferencing improves productivity while avoiding thousands of miles of car and air travel and associated carbon emissions. The federal government can achieve significant cost and energy savings and play an important role in the deployment and broader adoption of these technologies by increasing its own use of video conferencing solutions.

Additional Product Considerations

The Subcommittee has indicated that it has a particular interest in learning more about the use of recycled materials in ICT products and about proper management of used and obsolete devices.

Recycled Content

ITI member companies use significant quantities of recycled materials, including glass, metals and plastics, in new generations of our products, thus creating demand that helps sustain markets for these materials. To qualify for EPEAT, at least 65 percent of the materials in the product must be reusable or recyclable using current infrastructure and technologies. In addition, our companies have continuously decreased the volume of packaging materials while simultaneously increasing the percentage of recycled content.

Asset Management & Recycling

ITI members offer comprehensive asset management and product recycling services to the federal government as well as to our commercial and institutional customers. In fact, our companies have provided for the proper recovery and management of well over two billion pounds of used electronics products. Our members or their authorized contractors recover used devices, transfer data to new systems, remove sensitive information and properly manage recovered equipment. Functional equipment is typically refurbished

and returned to commerce for reuse. This is an environmentally-beneficial practice that helps derive the most value from the resources used to manufacture the equipment. Our members ensure that older or broken units are first used for spare parts, as appropriate, and then recycled in an environmentally-sound manner, with any commodities reclaimed for subsequent reuse.

ITI and our member companies have been working in close coordination with U.S. EPA and other stakeholders to develop a set of Responsible Recycling practices for electronics recycling. The R2 practices are intended to ensure that obsolete electronics are managed and recycled in a safe and environmentally-appropriate manner that is protective of human health and the environment. R2 is in the process of becoming a recognized standard, which will allow government, commercial, institutional and residential consumers alike to know that their obsolete products will be properly managed.

On the consumer side, many of our leading members offer voluntary national programs at little or no cost to our residential customers. Unlike the government and commercial marketplace, where our companies often sell thousands of units under a single contract, the consumer marketplace is very fragmented, as sales are often made one at a time at retail. In addition, manufacturers must rely on a national infrastructure of wholesalers, distributors and retailers to transport our products (often across state lines) and deliver them for final retail sale. With few exceptions, we do not have a direct connection with our customers at the point of sale.

As part of our corporate commitments on environment and sustainability, manufacturers believe we have a role – though not the only role – to play in offering recovery and recycling solutions to consumers. Our members provide a variety of recycling options to consumers, which include a combination of collection centers, special collection events, and mail-back programs.

SECTION 2: THE ENERGY, CLIMATE AND ECONOMIC BENEFITS OF ICT SYSTEMS AND SERVICES

The ICT sector plays a critical role in helping address major strategic challenges, including energy security, economic competitiveness and the transition to a clean energy economy. ICT hardware and software innovations yield transformative energy efficiency improvements, enable revolutionary Smart Grid, Smart Building and Smart Transportation systems and drive state-of-the-art renewable energy technologies. The ICT industry has powered major gains in U.S. and global economic productivity, has created tens of thousands of high-paying jobs here at home, and connects communities the world over to vital economic, educational and health resources.

Consider the following examples:

- The American Council for an Energy-Efficient Economy (ACEEE) concluded that "[f]or every extra kilowatt-hour of electricity that has been demanded by ICT,

the U.S. economy increased its overall energy savings by a factor of about 10. These productivity gains have resulted in significant net savings in both energy and economic costs. The extraordinary implication of this finding is that ICT provide a net savings of energy across our economy."

- In a July 2009 report, ACEEE also concluded that energy efficiency measures are capable of delivering up to 50% of the emissions reductions necessary to meet the President's 2050 emissions reductions goals.
- The Smart 2020 report issued by The Climate Group concluded that ICT strategies for energy efficiency could reduce up to 15% of global emissions by 2020. The U.S. addendum to that report indicates that ICT strategies could reduce annual U.S. carbon emissions by up to 22% by 2020, which translates into energy and fuel savings of $140 to 240 billion dollars.
- The Information Technology & Innovation Foundation estimates that spurring an additional investment of $30 billion in America's IT network infrastructure would create approximately 949,000 U.S. jobs through expanded broadband networks, health IT and the Smart Grid.

Policy Recommendations

I have provided an addendum to my testimony that includes a number of suggestions to drive the accelerated deployment of ICT systems and services and help realize these clear benefits. I would also like to provide specific information in my testimony regarding two recommended policy approaches.

1. **Drive Energy Efficiency Considerations into Enterprise-Level Federal ICT Procurement.** EPA's 2007 Report to Congress on Server and Data Center Energy Efficiency concluded that public and private sector data center managers rarely factor energy efficiency into their procurement and operational decisions:

   - "The barriers that prevent data centers from adopting changes that offer very reasonable paybacks are typically not technological but organizational. ... [one of these is] *Split incentives*: In many data centers, those responsible for purchasing and operating the IT equipment are not the same people that are responsible for the power and cooling infrastructure, who in turn typically pay the utility bills. This leads to a split incentive, in which those who are most able to control the energy use of the IT equipment (and therefore the data center) have little incentive to do so" (Page 11).
   - "Under this arrangement, most IT managers never see the energy bill for their equipment, and their job performance is not evaluated based on energy costs. While improved energy efficiency may benefit the organization overall, the data center manager will see little reward" (Page 86).
   - "In many organizations, it is standard practice to base IT equipment and software purchasing decisions on TCO [total cost of ownership], which includes the lifetime maintenance and support costs. These TCO calculations for IT equipment rarely include energy as a factor, but they should include

both the cost of electricity to run and cool the hardware as well as the cooling, power conditioning, and other capital equipment required to support the IT hardware in the data center" (Page 109).

Targeted federal action can help resolve this split-incentives issue, especially when it comes to innovations in areas such as advanced metering infrastructure, efficient data center strategies, applications modernization and rationalization, building systems energy efficiency, and telework. Therefore, ITI has been actively supportive of amendments by Representative Anna Eshoo and Senator Mark Udall that direct each federal agency to collaborate with OMB to create an implementation strategy for the purchase and use of energy efficient information and communications technologies and practices. Under this approach, each agency would (1) evaluate how ICT infrastructure could yield cost and energy savings; (2) meet new performance goals for energy efficient information and communications systems; and (3) be eligible to realize the savings and rewards brought about. The Eshoo Amendment is included in HR 2454 – the American Clean Energy and Security Act of 2009, and we strongly urge support for this provision. We are also hopeful that the President's new Executive Order will be implemented in a manner that helps address this problem, and look forward to working with the Administration to achieve this result.

2. **Direct the Department of Energy to Create Metrics to Determine the Annual Energy Rating of Enterprise-Level ICT Systems.** Energy efficiency is the most immediate and available method for reducing U.S. energy demand and increasing energy security. From "Smart" systems to advanced renewable energy technologies to electronic health records, policies in Washington will continue to rely more on ICT-led solutions to public policy challenges, thereby driving greater and more widespread adoption of ICT systems.

Facing this trend, major ICT companies have unleashed a wave of hardware and software innovations to make each generation of systems more energy efficient than the last. Several public utility companies have quantified the dramatic energy savings associated with cutting edge technology that greatly improves the energy efficiency of enterprise ICT systems including Data centers, servers, network, and storage systems. With models that quantify energy savings associated with efficiency improvements in systems and configurations, these utilities can offer rebates to their customers that undertake ICT consolidation and virtualization projects. These rebates are based on the energy savings that will be achieved by the customer over a given time period. The efficiency improvements incentivized can reduce energy consumption in data centers by 60% or more.

The primary barrier to the more widespread adoption of these programs is the absence of a recognized, government-approved methodology for quantifying these energy savings. Testing programs for ICT systems can be expensive to replicate, and many utilities lack the internal resources necessary to fully vet and

substantiate industry best practices and create rebate programs. Moreover, industry participants are more likely to base economic incentives on methodologies that are validated by the DOE, rather than models developed by a private contractor or fellow utility. DOE should form partnerships with the utility companies to validate their ICT energy efficiency programs and to assist the utilities in sharing information and best practices. This will drive more meaningful demand mitigation programs that will yield these dramatic energy efficiency savings more quickly.

Thank you again for the opportunity to testify today on this important set of issues. I would be happy to respond to any questions.